and adjusted in correspondence with the volume level associated with the selected location. A marker line **64** is displayed within the block to indicate the selected volume level. A digitally controlled, output attenuator, for example, may be provided in the control means **42** for varying the volume levels.

The subject output device **10** further includes an automatic dial directory **70** for storing emergency and frequently called numbers. As illustrated in FIG. **2**, directory **70** consists of a table having areas for the name of the party to be called and the corresponding telephone number. In addition, the upper most block **70** is intended to display the last number which has been dialed either from the directory or using dial pad **52**. The illustrated directory **70** has space for ten telephone numbers. In the preferred embodiment of the subject invention, additional storage space is provided in RAM **44** for another twenty telephone numbers defined by two additional pages. Any page of the directory can be accessed by utilizing control block **80**. More particularly, the selection of either the page forward **80***a* or the page back **80***b* blocks by the light pen will result in the desired directory page being displayed on the screen.

The format of the automatic dial directory **70** is stored in ROM **46**. The information within the directory is programmed into RAM **44** by the operator. In order to program the directory, the operator must first switch to the second or input display mode **86** by placing light pen **30** on control block **82** labeled change. By selecting change block **82**, the display **86**, illustrated in FIG. **3** will be generated. Display **86** includes an array **90** of alphanumerics which are located along the lower portion of the screen. The letters forming the names in directory **70** are selected by the light pen from the array. The programming steps are initiated via control blocks **92**, whose functions will be described in detail below.

In order to program a name and number into directory **70**, the operator initially selects the enter open block **94**, with light pen **30**. Thereafter, light pen **30** is used to locate the position in the directory where the upcoming entry is to be placed. A cursor (not shown) is displayed in the directory at the point selected by the light pen. The operator then selects the letters from alphanumeric array **90** and selects the digits of the phone number from dial pad **52**. The space and backspace blocks **90***a* and **90***b* are used as on a typewriter. When the programming sequence is accomplished, the user signifies satisfactory completion by aligning the light pen on control block **95**, labeled "OK". The latter action causes the information to be stored in RAM **44**. Control block **96**, labeled "NO" is used to cancel the proposed addition. When either of control blocks **94** or **96** are activated, the display remains in the change display mode **86** and additional numbers may be programmed. In the alternative, by selecting control block **98**, labeled "done", the most recent addition to the directory **70** will be stored and the display will return to the original phone mode display **50** as illustrated in FIG. **2**. It is noted that while the use of a visual alphanumeric array **90** is illustrated, the subject device may also be provided with a separate keyboard for performing the above described data entry or for inputting text and other information.

In certain situations, the user would find it undesirable to display personal telephone numbers in the display. In this situation, the operator can initiate the programming of the telephone number by selecting control block **102**, labeled "enter private". The actual programming of the name and telephone number is accomplished identically to the above described entry procedure. However, when the procedure is complete and the user stores the information by selecting one of the control blocks **94** or **98**, the displayed telephone number will be replaced with asterisks, as illustrated in area **104** of the directory.

The removal of telephone numbers from the directory is initiated by by selecting control block **106**, labeled "erase". When this mode is selected, the light pen is first placed at the beginning of the information to be erased, and then placed at the end of the information. The information which has been so delineated is erased from RAM **44**.

In the preferred embodiment of the subject invention, a day-date clock **108** is provided, as illustrated in the upper right hand corner of the displays. The programming of the correct data and time is initiated by selecting control block **110**, labeled "set clock". Similar to the programming of directory **70**, the time, day and date are input using the visual keyboard array **90** and the dial pad **52**.

Having described the elements of the input/output device **10** of the subject invention, its operation will now be described in detail. To originate a call, the user may either predial the phone number or dial the number after the dial tone has been established. To predial a telephone number, light pen **30** is used to select the digits of the desired telephone number. More particularly, light pen **30** is aligned with the areas on visual dial pad **52** in the desired sequence. The digits which are selected are displayed above control block **54**, as illustrated in FIG. **2**. If the particular telephone system utilizes a second dial tone to obtain an outside line, the pause block **54***a* is utilized to insert a tone sensing sequence or time delay in the dialing procedure. The use of the pause block is represented in the subject display by the letter "P", as illustrated for example, in the phone number located in position number five **112** of directory **70**. Once the number has been pre-dialed, it will be transmitted when the operator either removes handset **24** from cradle **23** or selects the speakerphone system by actuating control block **58***a*. The central processing means **40** generates the signal tones or dial pulses corresponding to the digits which have been selected.

During the call, the received volume level supplied to speaker **26** can be adjusted by placing the light pen at the desired location within volume control block **60**. As discussed above, the output is attenuated in correspondence with the position selected within block **60**. When the telephone call is completed, the operator may either hang up handset **24** or select the disconnect control block **56** with light pen **30**. If the disconnect block **56** is selected while handset **24** is off hook, a momentary break in the line will be produced, followed by the re-establishment of a dial tone.

When it is desired to utilize directory **70**, the telephone is activated in the same manner as with regular dialing. Thereafter, the light pen is placed anywhere within the block of the directory corresponding to the number selected. That number is then automatically dialed and displayed above the control block **54**. The last number dialed, either from directory **70** or from dial pad **52**, is displayed in the uppermost block **74** of the directory. If the telephone called is busy and the opera-